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Ahlbergia bijieensis spec. nov. from Guizhou, China

(Lepidoptera, Lycaenidae)

by

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Abstract: *Ahlbergia **bijieensis*** **spec. nov.** is described from Guizhou, China. *Ahlbergia oppocoenosa* (Johnson, 1992), **comb. nov.** (= *Novosatsuma oppocoenosa* Johnson, 1992), *A. unicolora* Johnson, 1992 and *A. caesius* Johnson, 1992 are discussed.

Introduction: This paper deals with a small species group of the genus *Ahlbergia* Bryk, 1946 defined by the following combination of characters: 1) forewing upperside of ♂ extensively suffused by bright blue scales in cell and basal half of spaces 1a-2; 2) hindwing underside of both sexes with submarginal reddish (or warmer) patches (in "limbal areas" sensu Johnson, 1992) between the marginal grayish suffusion and the dark brown (or black) submarginal V-shaped markings in spaces 1-3. Judging from the original descriptions (Johnson, 1992) and photos of type specimens, this group is composed of the following four species and further two uncertain species: *Ahlbergia unicolora* Johnson, 1992, *A. caesius* Johnson, 1992, *A. oppocoenosa* (Johnson, 1992) **comb. nov.** (= *Novosatsuma oppocoenosa* Johnson, 1992), and *Ahlbergia **bijieensis*** **spec. nov.**

Johnson (1992) when describing his new species, frequently associated specimens in different sex from different localities. Such taxonomic treatments might cause errors because of the extreme similarities between species and the very high endemism in the genus. In springs of 2014 and 2015 the senior author made efforts to explore the type localities of the very little known *A. unicolora* Johnson and *A. oppocoenosa* (Johnson); he successfully collected several specimens of both species in both sexes. A careful examination of ♂ and ♀ genitalia taken from the specimens from same localities proved that Johnson (1992) did some errors in associating the ♀ allotype from non-type locality with the ♂ HT for both *A. unicolora* Johnson and *A. oppocoenosa* (Johnson).

Abbrevitions:

AT: Allotype
BSNU: Biological laboratory of Shanghai Normal University, Shanghai, P.R. China.
CHH: Collection of Hao Huang.
CDT: Collection of Tong Dan.
FMNH: Field Museum of Natural History, Chicago.
HT: Holotype.
PT: Paratype.
TL: Type locality

Taxonomic accounts

Ahlbergia unicolora Johnson, 1992 (figs. 14-15, 36-38, 44-45)

Neue Ent. Nachr. **29**: 34, partim for HT and one PT from Loutsechiang, figs. 67A for ♂ HT, fig. 20 for ♂ genitalia of HT; TL: Loutsechiang (north of Gongshan, Nujiang).

Material: Yunnan Province: 6 ♂♂, 1 ♀, Nujiang Prefecture, Gongshan County, Bingzhongluo, Nidadang, 1700-1900 m, 6.-11.V.2015, H. Huang leg.; 1 ♂, 1 ♀, Chuxiong Prefecture, Dayao County, Santai, Xiao-bai-cao-ling, 1800 m, 18.IV.2015, H. Huang leg..

Identification: The following important characters were originally described for the ♂: 1) ground color of underside „very dull beige brown to yellow brown"; 2) hindwing underside „with basal disc hardly paler than distal ground but with postbasal (subbasal) markings emphatic and disc margin darkly suffused"; 3) „limbal areas" (submarginal areas in spaces 1b-3) of hindwing underside „marked with bright red-brown suffusion". And the following ♂ genital characters are recognizable from the original figure of ♂ genitalia taken from HT (fig. 38): 4) upper cornutus of aedoeagus[1] with fewer teeth much larger than those on lower cornutus (distal cornutus); 5) valvae in ventral view with conjoined basal part markedly broadened from the free distal branches; 6) valvae in ventral view with outer lateral margins of valvae abruptly stepped near middle of the free branches. The HT and the only known topotypic PT were said to be deposited in American Museum of Natural History (Johnson, 1992), but both specimens could not be located in that museum (Lesley Thayer & David Grimaldi, pers. comm.). However, two PTs of *A. unicolora* Johnson (figs. 1-6) were successfully located in the Field Museum of Natural History (FMNH), collected from the non-type localities, „Chauloo" (Jiulong, SW of Kangding, Sichuan) and „Zambu ku" (N of Jiulong, Sichuan), possessing bright blue

scales on basal half of both wings uppersides. Further study reveals that these two PTs do not belong to *A. unicolora* Johnson, however the presence of bright blue scales on basal half of wings upperside should be regarded as one of the important characters of *A. unicolora* Johnson which are not mentioned in Johnson's (1992) original description. There are such bright scales recognizable from the black and white photo of the HT originally published by Johnson (1992: 117, figs. 67A).
The TL of *A. unicolora* Johnson is „Loutsekiang", a geographic name frequently used by early European travelers for a part of the Nujiang River in northwestern Yunnan. The HT is probably collected from a small area around the Baihanluo village in Bingzhongluo of Gongshan County, which was often spelled as „Bahand" and well known as a French Missionary point. The first author collected there for two weeks in spring 2015 to rediscover *A. unicolora* Johnson on some specimens, including both sexes. These newly collected topotypic ♂♂ specimens possess all the above mentioned important characters for *A. unicolora* Johnson. The single ♀ specimen collected from the TL (fig. 15) however shows great difference in the genitalia (fig. 44) from the AT of *A. unicolora* Johnson collected from „east frontier of Tibet" (Johnson, 1992: 104, fig. 21). It is very possible that the type series of *A. unicolora* Johnson contains specimens belonging to three different species: 1) the real *A. unicolora* Johnson from Nujiang valley (figs. 14-15, 28-30); 2) a second species restricted to Jiulong area („Chauloo" and „Zambu ku", to the southwest of Kangding, Sichuan (figs. 1-8); 3) a third species known from Kangding area („eastern frontier of Tibet"), represented by the AT of *A. unicolora* Johnson.

Diagnostic characters: The following characters are useful to distinguish *A. unicolora* Johnson from other species except those fully discussed in this paper: 1) ♂ with extensive blue suffusion on both wings upperside; 2) hindwing underside in both sexes with reddish patches in spaces 1-3, between marginal gray suffusion and submarginal blackish or brownish V-shaped markings.
The following characters are useful to distinguish *A. unicolora* Johnson from *A. caesius* Johnson, *A. oppocoenosa* (Johnson) and *A. **bijieensis*** **spec. nov.**: 3) both sexes with submarginal V-shaped marking in space 1 of hindwing underside less produced basad than that of *A. caesius* Johnson; 4) both sexes with ground color of underside more reddish brown than in *A. oppocoenosa* (Johnson) and *A. **bijieensis*** **spec. nov.**; 5) the conjoined basal part of valvae in ♂ genitalia more markedly broadened from the branched distal part of valvae than in *A. oppocoenosa* (Johnson); 6) the upper cornutus of aedoeagus in ♂ genitalia with larger and more widely separated teeth than in both *A. oppocoenosa* (Johnson) and *A. caesius* Johnson; 7) the lamella postvaginalis of ♀ genitalia markedly longer and more square than in *A. caesius* Johnson, and signum longer and bifurcate at inner apex; 8) the lamella postvaginalis with more apparent convolutions on ventral surface than in *A. **bijieensis*** **spec. nov.**; 9) the ductus bursae markedly longer than that of *A. oppocoenosa* (Johnson).

Distribution (fig. 51): Beside the type locality in Nujiang valley, only a locality in Dayao county, near Kunming has been proved to be a habitat of this species. Johnson's (1992) records of this species from localities of Sichuan were just misidentifications of other species.

Ahlbergia caesius Johnson, 1922 (figs. 10-13, 35, 40-43)

Neue Ent. Nachr. **29**: 49, figs. 73 for ♀ HT, fig. 30 for ♀ genitalia of HT; TL: „East frontier of Tibet" (Tibetan areas in Sichuan and Yunnan).

Material: Sichuan Province: 1 ♀, Liangshan Yi Autonomous Prefecture, Meigu County, 2500 m, 14.VI.2012, X.-D. Yang leg.; , 1 ♀, Jiulong, SW of Kangding, 2500 m, 26.IV.2014, H. Huang leg.. Yunnan Province: 2 ♂♂, 2 ♀♀, Nujiang Prefecture, Gongshan County, Bingzhongluo, Nidadang, 1700-1900 m, 6.-11.V.2015, H. Huang leg.; 1 ♀, Diqing Prefecture, Deqin County, Mingyong village, 2300 m, 27.V.2014, H. Huang leg.

Identification: The following important ♀ characters are recognizable from the original description and the color photos of ♀ HT (fig. 12): 1) both wings upperside extensively blue; 2) hindwing underside with reddish brown patches between marginal suffusion and submarginal V-shaped markings; 3) submarginal V-shaped blackish marking in space 1 on hindwing underside strongly produced basad; 4) lamella postvaginalis of ♀ genitalia somewhat triangular in shape (fig. 43). The type locality of this species is uncertain, as the HT is simply labeled from „East frontier of Tibet", which could be any part of the previously known eastern Tibetan area including the Tibetan Autonomous Prefectures in Sichuan, Yunnan, Gansu and Qinghai. Specimens examined by the authors came from a few localities in Tibetan areas of Sichuan and Yunnan; they were identified as *A. caesius* Johnson by possessing most of the above-mentioned characters and by the following discussions.
There is no ♀ specimen found to match the HT of *A. caesius* Johnson in all details; this may indicate that the true TL of this species has not been touched by the authors. However, the following observations strongly support to identify the specimens examined by the authors as the real *A. caesius* Johnson.
1) A ♀ specimen collected from Meigu, southern Sichuan (fig. 13) agrees well with the HT in most external features except upperside ground color which is narrowly suffused by blue scales; its genitalia agree with the HT in most charac-

ters, except for a pair of convolutions near base (like in fig. 40) and the bifurcate signum on corpus bursae (like in fig. 47).
2) The ♀ specimens collected from Gongshan (fig. 11) and Deqin, NW Yunnan agree with the HT in most external features, except for the more reddish scales powdered on postdiscal area of hindwing underside. The ♀ genitalia are in common with those of the HT (fig. 43) in shape of lamella postvaginalis, the length of ductus bursae and shape of signum on corpus bursae; however they are variable in the presence or absence of convolutions on ventral surface. A specimen (fig. 41) from Gongshan has all details of ♀ genitalia identical to those of the HT (fig. 43), with no apparent convolutions on ventral surface of lamella postvaginalis; another ♀ from the same locality (fig. 40), however, bears a pair of strong convolutions as in the above-mentioned specimen from Meigu, Sichuan.
3) A ♀ collected from Jiulong, western Sichuan, sharing the similar genitalia with the HT, shows a more blackish appearance on underside of both wings.

These observations may indicate that *A. caesius* Johnson is individually variable in the presence or absence of convolutions on lamella postvaginalis, and is variable geographically in the ground color of wings. All the populations of *A. caesius* Johnson can be united by using the above mentioned four characters. Further research is needed for detecting the true type locality and examining more topotypic specimens. It is possible that at least the populations from Gongshan and Deqin, NW Yunnan deserve being treated as a distinct subspecies.
The association of ♂♂ and ♀♀ from Gongshan, Nujiang valley in this study is based upon the following considerations: 1) they are collected together from the same locality at the same time; 2) they share most external characters, including the sharply produced submarginal dark V-shaped marking in space 1 on hindwing underside.

Diagnostic characters: The following characters are useful to distinguish *A. caesius* Johnson from other species, except those discussed in this paper: 1) ♂ with extensive blue scales on both wings upperside; 2) hindwing underside in both sexes with reddish patches in spaces 1-3 between marginal gray suffusion and submarginal blackish or brownish V-shaped markings.
The following characters are useful to distinguish *A. caesius* Johnson from *A. unicolora* Johnson, *A. oppocoenosa* (Johnson) and *A. **bijieensis*** **spec. nov.**: 3) the submarginal V-shaped marking in space 1 on hindwing underside more produced basad than that of *A. unicolora* Johnson; 4) the conjoined basal part of valvae in ♂ genitalia more markedly broadened from the branched distal part of valvae than in *A. oppocoenosa* (Johnson); 5) saccus shorter than in *A. unicolora* Johnson, *A. oppocoenosa* (Johnson) and *A. **bijieensis*** **spec. nov.**; 6) upper cornutus of aedoeagus with more regular teeth markedly evener in size than in *A. unicolora* Johnson; 7) lamella postvaginalis of ♀ genitalia somewhat triangular in shape; 8) ductus bursae markedly longer than that of *A. oppocoenosa* (Johnson); 9) signum of corpus bursae with inner process constantly shorter than that of *A. unicolora* Johnson and *A. **bijieensis*** **spec. nov.**, usually not bifurcate at apex.

Distribution (fig. 51): NW Yunnan (Gongshan, Deqin), S Sichuan (Jiulong, Meigu).

Ahlbergia oppocoenosa (Johnson, 1992) **comb. nov.** (figs. 22-27, 33-34, 46-47)

Novosatsuma oppocoenosa Johnson, 1992: 65, partim for HT only, figs. 82A for ♂ HT, fig. 42 for ♂ genitalia of HT; TL: „Ta-Ho“ (assumed to be near the Dadu River, Sichuan).

Material: Sichuan Province: 1 ♂, 2 ♀♀, Ganzi Tibetan Autonomous Prefecture, Luding County, Moxi, 1600-1800 m, 13.-16.IV.2015, H. Huang leg..

Identification: The following important characters were originally described for the ♂: 1) forewing upperside with „prominent azure blue proxad in cells CuA1 and CuA2“, hindwing upperside with „azure blue in the discal and anal areas“; 2) hindwing underside with „basal disc mottled contrastingly dark brown and warmer cinnamon brown“; 3) hindwing underside with „limbal area reddish brown to sienna“. And the following ♂ genital characters are recognizable from the original figure of genitalia taken from HT (fig. 34): 4) valvae in ventral view with conjoined basal part only slightly broadened from the branched distal part. The TL of *A. oppoceonosa* (Johnson) is „Ta-Ho“, a geographic name frequently used by early European travelers for some localities near the Dadu River or near Kangding (Wagner, 1959). A ♂ (figs. 22-23), recently collected by the first author from Moxi, Luding (near Dadu River) agrees with the HT in most details of external features, except for the lack of blackish dusting between subbasal and discal lines on hindwing underside; however, such blackish dusting markings in HT have been found also in a ♀ specimen collected together with the above-mentioned ♂ from Moxi, thus to have such a black dusting or not is merely an individual variation and has no taxonomic value. The valvae of the HT, illustrated by Johnson (1992), show a shorter contracted distal part than that of the above-mentioned ♂ from Moxi, this difference may be explained by the individual variation. But further research is needed in the future.
Two ♀♀ (figs. 24-27) collected together with the ♂ from the same locality at Moxi were identified as the same species as the ♂ because of their extreme similarity in external features. The ♀ genitalia taken from these specimens (figs. 46-47) are very different from those of the AT of *Ahlbergia oppoceonosa* (Johnson) collected from Dali, northern Yunnan, which is far away from the TL. Moreover, the ♀ AT of *A. oppoceonosa* (Johnson) has markedly thinner blue suffusion

on both wings upperside than in the ♂ HT, in opposite to the rule that all species of elfin butterflies have more extensive structural color on upperside in ♀ than in ♂. Thus it can be sure that the AT of *A. oppoceonosa* (Johnson) from Dali was wrongly associated with the HT from Sichuan, representing a different species close to *Novosatsuma magnapurpurea* Johnson, 1992.
The ♂ from Moxi looks a little like *N. magnapurpurea* Johnson (fig. 9), but bears the warmer brown patches in spaces 1-3 between marginal and submarginal markings on hindwing underside.

Generic classification: As discussed above, the ♀ AT of this species was wrongly associated with the ♂ HT in the original description and the ♀ genitalia of this species show typical diagnostic characters for the genus *Ahlbergia* Bryk instead of *Novosatsuma* Johnson, 1992.

Diagnostic characters: The following characters are useful to distinguish *A. oppoceonosa* (Johnson) from other species except those discussed in this paper: 1) ♂ with extensive blue scales on both wings upperside; 2) hindwing underside in both sexes with reddish patches in spaces 1-3 between marginal gray suffusion and submarginal blackish or brownish V-shaped markings.
The following characters are useful to distinguish *A. oppoceonosa* (Johnson) from *A. unicolora* Johnson, *A. caesius* Johnson and *A. **bijieensis*** **spec. nov.**: 3) the submarginal V-shaped marking in space 1 on hindwing underside more produced basad than that of *A. unicolora* Johnson; 4) the conjoined basal part of valvae in ♂ genitalia less broadened from the branched distal part of valvae than in *A. unicolora* Johnson, *A. caesius* Johnson and *A. **bijieensis*** **spec. nov.**; 5) lamella postvaginalis of ♀ genitalia somewhat semicircular in shape, different from that of *A. caesius* Johnson; 6) ductus bursae markedly shorter than that of *A. unicolora* Johnson, *A. caesius* Johnson and *A. **bijieensis*** **spec. nov.**

Distribution: Sichuan (Luding area). Johnson (1992) has recorded a further ♂ PT from Tsekou, NW Yunnan, but such record seems to be a misidentification of another species, since at least two similar species occur in the nearby area of Tsekou.

Ahlbergia bijieensis spec. nov. (figs. 16-21, 31-32, 39)

HT ♀ (figs. 20-21): China, Guizhou province, Bijie City, Mt. Wenbi-shan, 1600m, 12.IV.2015, T. DAN leg., deposited in BSNU.
PTs: 2 ♂♂ (figs. 16-19, CHH), same data as the HT; 3 ♂♂ (CHH, CDT), Bijie City, Mt. Huju-shan, ca 1500-1600 m, 24.IV.2014, T. Dan leg.

Etymology: This new species is named after its type locality.

Field observations (figs. 50-51): Most of the specimens were collected on the mountain ridge at an elevation of 1600 m, where *Castanea* trees and *Cyclobalanopsis* trees (Fagaceae) were abundant. Some individuals were captured when they were sipping nectar from flowers of *Lonicera chrysantha* Turcz. (Caprifoliaceae).

Diagnosis: This new species is similar to *A. oppoceonosa* (Johnson), *A. unicolora* Johnson and *A. caesius* Johnson, but can be distinguished from all of them by the following combination of characters.
Both sexes:
1) Underside of both wings more densely suffused by whitish scales than in *A. unicolora* Johnson and *A. caesius* Johnson, with ground color less reddish than in *A. unicolora* Johnson.
2) Submarginal blackish crescent in space 1 on hindwing underside less produced basad than in *A. caesius* Johnson and *A. oppoceonosa* (Johnson).
3) Valvae of ♂ genitalia in ventral view with the conjoined basal part more markedly broadened from the branched distal part than in *A. oppoceonosa* (Johnson).
4) Saccus of ♂ genitalia longer than in *A. caesius* Johnson.
5) Socii of ♂ genitalia in lateral view longer and thinner than in *A. unicolora* Johnson.
6) Ductus bursae of ♀ genitalia markedly longer than that of *A. oppoceonosa* (Johnson).
7) Ductus bursae with ventral wall non-pigmented near apex, not entirely pigmented as in *A. oppoceonosa* (Johnson), *A. unicolora* Johnson and *A. caesius* Johnson.
8) Lamella postvaginalis semicircular, not triangular as in *A. caesius* Johnson.
9) Lamella postvaginalis rather smooth on ventral surface, without deep convolutions which are well marked in *A. unicolora* Johnson.
10) Signum on corpus bursae markedly longer than in *A. caesius* Johnson.

This new species can be easily distinguished from all the remaining species by having extensive blue suffusion on both wings upperside of the ♂ and bearing reddish patches between marginal and submarginal markings in spaces 1-3 on hindwing underside in both sexes.

Individual variations: The following male characters are found to be individually variable for this new species: 1) length

of forewing varies from 12.5 to 15mm; 2) ♂ brand (androconial patch) is usually very large, but sometimes can be much thinner than usual; 3) ♂ brand can be black or grayish brown in color; 4) the powdered white scales on underside of both wings can be very densely distributed, giving the specimen a very whitish appearance on underside, or sparsely distributed, making the specimen a grayish brown appearance on underside like in *A. oppoceonosa* (Johnson); 5) reddish brown patches between marginal and submarginal markings on hindwing underside are very variable in width; 6) submarginal dark V-shaped markings or crescents can be obsolete or nearly absent; 7) valvae in ♂ genitalia can be much thinner than those figured (figs. 31-32), with outer lateral margins more straight than those figured (figs. 31-32).

Ahlbergia sp. incerta (figs. 1-8, 48)

Ahlbergia unicolora Johnson, 1992: 34, partim for PTs from Chauloo and Zambu ku (both near the Jiulong, Sichuan). Misidentification.

Material: Sichuan Province, 1 ♀, Ganzi Tibetan Autonomous Prefecture, Jiulong County, 2500 m, 26.IV.2014, H. Huang leg.

Remarks: As discussed above, the type series of *A. unicolora* Johnson contains specimens belonging to three different species: 1) the real *Ahlbergia unicolora* Johnson from Nujiang valley (figs. 14-15, 28-30); 2) a second species restricted to Jiulong area („Chauloo" and „Zambu ku"), to the southwest of Kangding, Sichuan (figs. 1-8); 3) a third species known from Kangding area („eastern frontier of Tibet"), represented by the ♀ AT of *A. unicolora* Johnson and a pair of PTs from the same locality as the AT (Johnson, 1992).

For the above mentioned second species, the photos of two PTs of *A. unicolora* Johnson from „Chauloo" and „Zambu ku" have been examined, and a further ♀ specimen collected recently from the same area has been dissected. The ♀ genitalia of this species are similar to those of *A. oppoceonosa* (Johnson), but differ in having lamella postvaginalis markedly more square in shape. Further material is needed to investigate the relationship between this uncertain species and *A. oppoceonosa* (Johnson).

For the above mentioned third species, the first author also collected a single ♀ specimen from Luding which possesses the same genital characters as in the AT of *A. unicolora* Johnson. It is not worthy being discussed in details herein because of the scanty of material. It can be sure that further explorations to the mountain ranges in western China will harvest more new discoveries on the elfin butterflies.

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References

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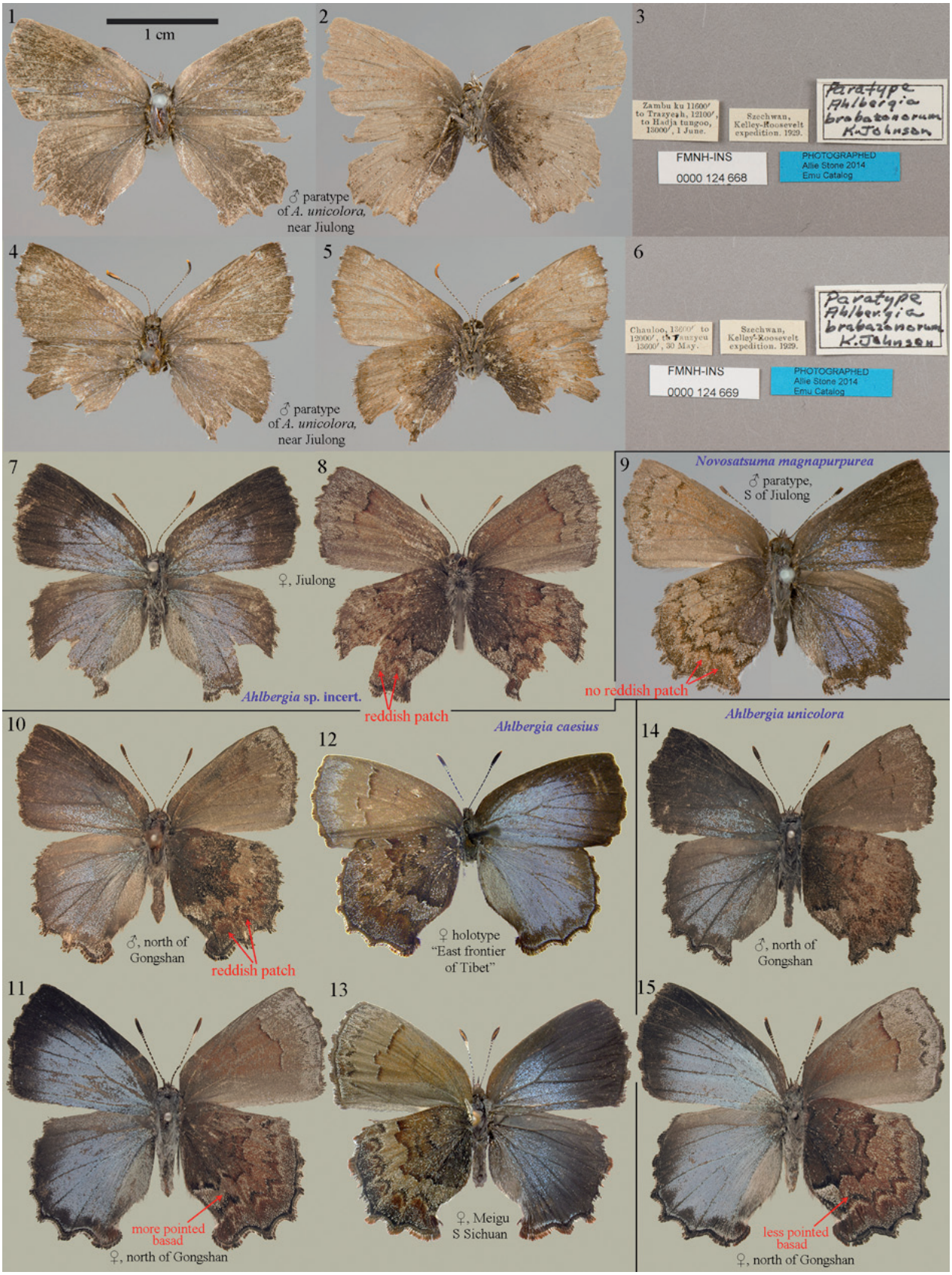
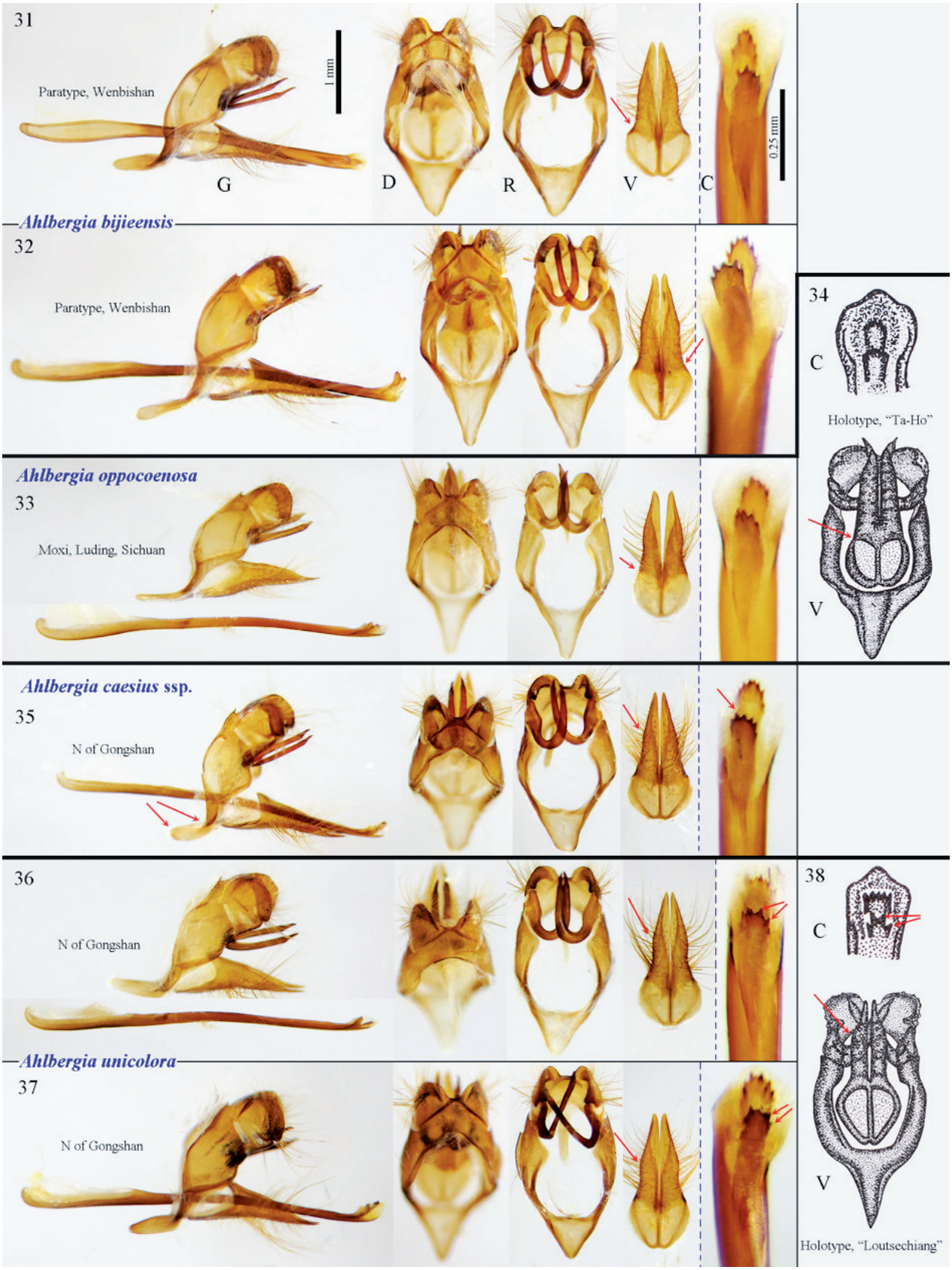
[1]) The authors used penis instaed of aedoeagus. As penis and aedoeagus (aedeagus in the English spelling) are totally different in anatomy - both are analog but not homolog organs - the Editor changed penis, using aedoeagus in the correct Latin spelling. This correction has been done in all papers of this Atalanta volume.

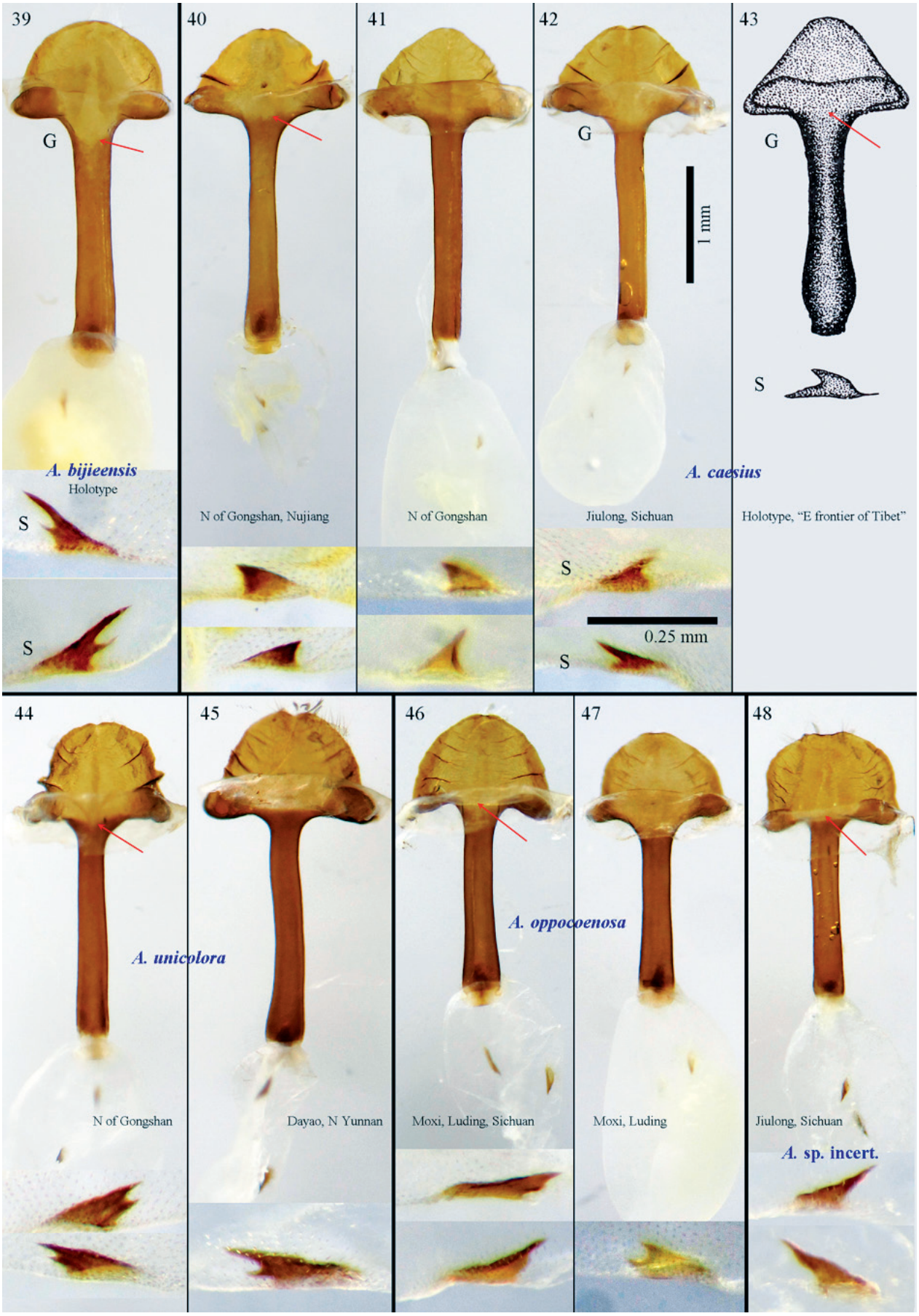


Figs. 1-15: Habitus of elfin butterflies under same scale. (1-8) *Ahlbergia* sp. incert.; (9) *Novosatsuma magnapurpurea* Johnson, 1992, paratype ♂, FMNH, Yatsu to Yalung River (NE of Muli), 30.IV.1929; (10-13) *Ahlbergia caesius* Johnson, 1992; (14-15) *A. unicolora* Johnson, 1992.

Figs. 16-30: Habitus of elfin butterflies under same scale. (16-21) *Ahlbergia* ***bijieensis*** **spec. nov.**; (22-27) *Ahlbergia oppocoenosa* Johnson, 1992; (28-30) *Ahlbergia unicolora* Johnson, 1992.



Figs. 31-38: ♂ genitalia of *Ahlbergia* species at same scale (except for 34 and 38), consisting of whole genitalia in lateral view (G), of genitalia in dorsal view to show dorsum (D), of ring in ventral view (R), of valvae in ventral view (V), and of enlarged apex of edeagus in dorsal view to show cornuti (C). (31-32) *Ahlbergia* ***bijieensis*** **spec. nov.**; (31) specimen shown in figs. 16-17; (32) figs. 18-19; (33-34) *Ahlbergia oppocoenosa* Johnson, 1992; (33) figs. 22-23; (34) holotype, after Johnson (1992); (35) *Ahlbergia caesius* Johnson, 1992, specimen shown in fig. 10; (36-38) *Ahlbergia unicolora* Johnson, 1992; (36) fig. 14; (37) fig. 29; (38) holotype, after Johnson (1992).



Figs. 39-48: ♀ genitalia of *Ahlbergia* species at same scale (except for 43), consisting of lamella postvaginalis, ductus bursae and corpus bursae in ventral view (G), and of enlarged signa of corpus bursae (S). (39) *Ahlbergia* ***bijieensis*** **spec. nov.**, specimen shown in figs. 20-21; (40-43) *Ahlbergia caesius* Johnson, 1992; (40, 42) specimens not figured; (41) fig. 11; (43) HT after Johnson (1992); (44-45) *Ahlbergia unicolora* Johnson, 1992; (44) fig. 15; (45) fig. 30; (46-47) *Ahlbergia oppocoenosa* Johnson, 1992; (46) figs. 24-25; (47) figs. 26-27; (48) *Ahlbergia* spec. incert., figs. 7-8.

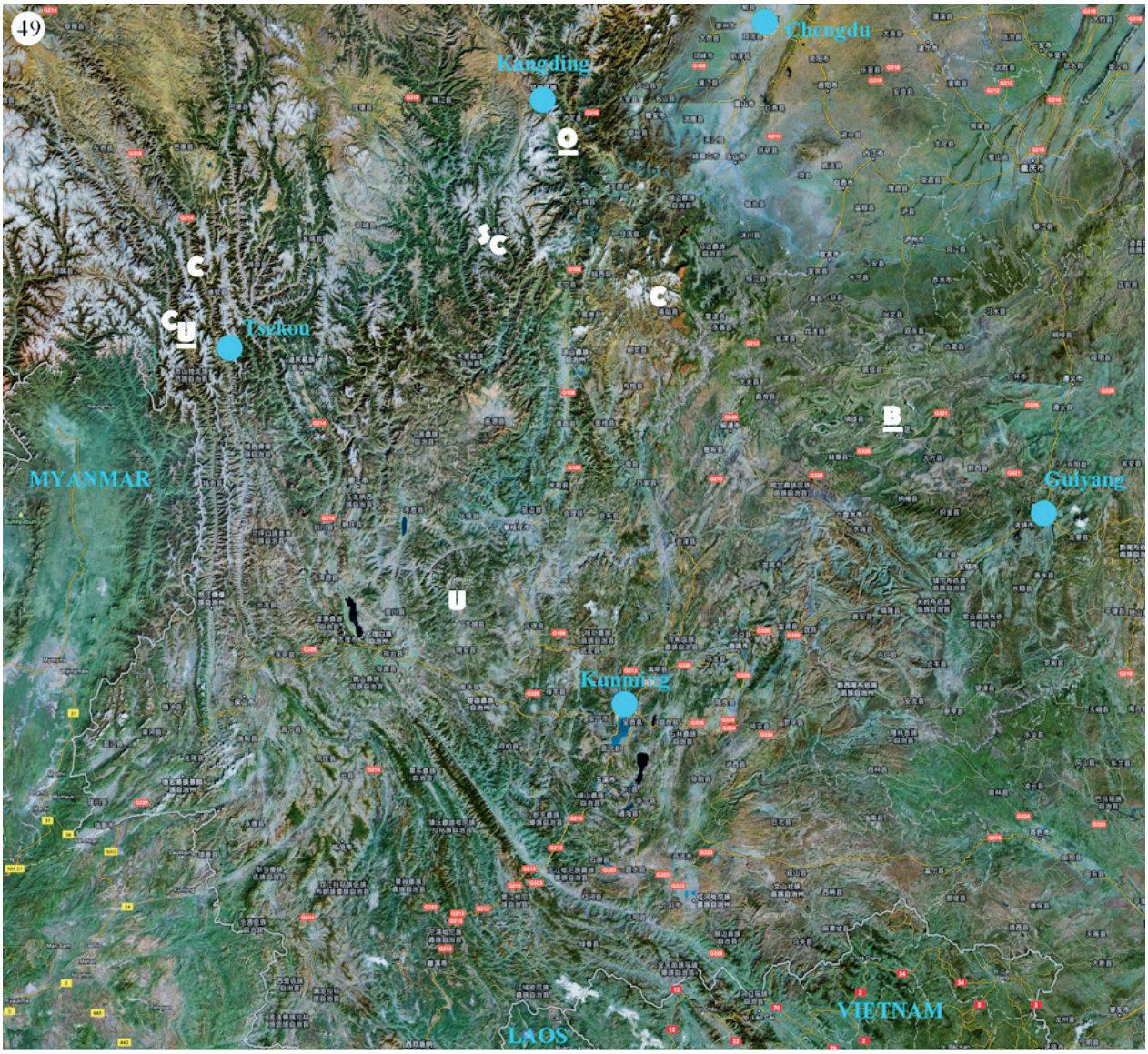


Fig. 49: Distribution of *Ahlbergia* species dealt with in this paper. (B) *Ahlbergia* ***bijieensis*** **spec. nov.**; (C) *Ahlbergia caesius* JOHNSON, 1992; (O) *Ahlbergia oppocoenosa* JOHNSON, 1992; (U) *Ahlbergia unicolora* JOHNSON, 1992; (S) *Ahlbergia* spec. incert. Letter with underline = TL

Fig. 50: An individual of *Ahlbergia* ***bijieensis*** **spec. nov.** sipping nectar from a flower of *Lonicera chrysantha* TURCZ. (Caprifoliaceae).

Fig. 51: Biotope of *Ahlbergia* ***bijieensis*** **spec. nov.** on mountain ridge of Wenbishan, Bijie, outlined by red.